

- 1 A bank uses a local area network to connect all the computers in its head office.

State **two** ways the local area network can be used to monitor the work of employees.

1

2

[2]

- 2(a) A law firm currently use a Local Area Network (LAN) linked to a Wide Area Network (WAN). They want to upgrade their system to utilise cloud storage.

Define what is meant by a Wide Area Network.

[1]

- (b) Explain **two** disadvantages to the law firm of storing their data in the cloud.

[4]

- 3 A company, OCR Supermarkets, has supermarket stores throughout the country. The computers for each store connect to the central office using a Wide Area Network (WAN).

OCR Supermarkets use a client-server network to connect the checkout computers to the store's server.

Describe **two** benefits to OCR Supermarkets of using a client-server network instead of a peer-to-peer network.

Benefit

1: -----

Benefit

2: -----

[4]

- 4 The owners of a large bakery have a Local Area Network (LAN) with a star topology. They order their supplies over the Internet. When data is transmitted from the bakery to the supplier, network protocols are used.

The owners of a large bakery have a Local Area Network (LAN) with a star topology.

Explain **four** reasons why the bakery may use a star network topology for their LAN.

[4]

- 5 An office has a LAN (Local Area Network). The office has four employees who each have a laptop. The office also has one server and one networked printer.

The office introduces a WAP (Wireless Access Point) to allow network access to wireless devices.

The office manager has noticed that the performance of the network has recently decreased.

- (i) Describe how introducing wireless access could have slowed down the network.

[2]

- (ii) Identify **two** other factors that can affect the performance of a network.

1 -----

2 -----

[2]

- 6 The IP address 192.149.119.226 is linked to the website with a URL of <https://www.ocr.org.uk>

When <https://www.ocr.org.uk> is entered into a browser, the website homepage is loaded.

Describe the relationship between the website URL (<https://www.ocr.org.uk>), the IP address and the webserver.

Blank lined paper for writing.

7 Users can access websites from library computers.

Complete the description of accessing websites using the given list of terms. Not all terms will be used.

0	1	127	128	255	256	Colon
Domain Name Server			Embedded systems		File server	Full stop
Hyphen	Internet protocol		MAC address		Router	
Uniform Resource Locator		Web server		Clients		

A website is hosted on aThe computers that access the websites are called

The user enters the into a web browser, The web browser sends a request to the for the matching IP (Internet Protocol) address, If found the IP address is returned. A request is then sent to this IP address.

An IPv4 address is made of 4 groups of digits, Each group can be between the denary values and The groups of digits are separated by a

[7]

8(a) The owners of a large bakery have a Local Area Network (LAN) with a star topology. They order their supplies over the Internet. When data is transmitted from the bakery to the supplier, network protocols are used.

Define what is meant by a 'network protocol'.

[1]

(b) TCP/IP is a set of protocols based on layers.

(i) With regards to network protocols, define what is meant by a 'layer'.

[1]

(ii) Describe **one** advantage of using layers to construct network protocols.

[2]

9 A bank uses a local area network to connect all the computers in its head office.

Computers in the network can be identified using both IP addresses and MAC addresses.

Describe **two** differences between IP addresses and MAC addresses.

[4]

10(a) A library does not use encryption when data is transmitted through its network.

)

Give **two** reasons why the library should use encryption.

1 _____

2 _____

[2]

(b) Protocols are used to transmit data through the network and over the internet.

Identify **one** protocol that can be used to perform each of the following tasks:

Send an email _____

Access a website securely _____

[2]

11 The building is considering the implementation of a virtual network.

Describe what is meant by a virtual network.

[2]

END OF QUESTION PAPER